

Amendment is necessary and was not earlier presented because it is made in response to arguments raised in the Final Rejection. Entry of the Amendment is thus respectfully requested.

I. RESTRICTION REQUIREMENT

The Office Action asserts that the restriction requirement is proper and is made final. Applicant acknowledges that the Restriction Requirement has been made final.

However, Applicant again submits that claims 1, 3-14 and 16-26 do not lack unity of invention because they recite common special technical features. The Examiner's attention is again directed to MPEP page AI-36, Annex B, Part 1, which indicates the following:

Unity of invention exists only when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" is defined in Rule 13.2 as meaning those technical features that define a contribution which each of the inventions, considered as a whole, makes over the prior art... The method for determining unity of invention under Rule 13 shall be construed as permitting... in addition to an independent claim for a given product, and an independent claim for a process specially adapted for the manufacture of the product... Thus, a process shall be considered to be specially adapted for the manufacture of a product if the claimed process inherently results in the claimed product with the technical relationship being present between the claimed product and claimed process. The words "specially adapted" are not intended to imply that the product could not also be manufactured by a different process. (Emphasis added)

Applicant submits that there is a special technical relationship present between the product of claims 1, 3-7, 14, and 16-20, and the process of claims 8-13 and 21-26, and that the method of claims 8-13 and 21-26 is specially adapted for the manufacture of the product of claims 1, 3-7, 14 and 16-20.

In particular, claims 1 and 11 claim a piezoelectric resonator comprising leads being provided with a flat leading end portion which opens in a substantially U-shaped edge which opens toward a leading end of the leads, connected substantially in parallel with an electrode, using a connecting layer formed with a conductive resin between the flat leading end portion and the electrode, the piezoelectric resonator element being supported by the leads so that a gap is formed between the supporting member and the piezoelectric resonator element.

Claims 8 and 21 claim a method for manufacturing a piezoelectric resonator comprising providing a gap between the supporting member and the piezoelectric resonator element, and forming a connecting layer of a conductive resin between the electrode and flat leading end portions of the leads, connected substantially in parallel with the electrode, and having a substantially U-shaped edge which opens toward a leading end thereof.

Additionally, the Examiner's attention is directed to 37 C.F.R. §1.475(b)(1) which reads as follows: "An international or national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations or categories: (1) a product and a process specially adapted for the manufacture of said product."

Accordingly, Applicant submits that the restriction requirement of claims 1, 3-7, 14 and 16-20, and claims 8-13 and 21-26 is improper. Applicant requests substantive consideration of all of claims 1, 3-7, 8-14 and 16-26.

II. THE CLAIMS DEFINE ALLOWABLE SUBJECT MATTER

The Office Action rejects claims 1, 3-7, 14 and 16-20 under 35 U.S.C. §103(a) as being unpatentable over Ogiso (WO95/24075) in view of Pennybacker (U.S. Patent No. 2,413,579). In particular, the Office Action asserts that Ogiso, especially Fig. 16, teaches a resonator, holder, supports, electrodes and connecting layer, but uses a "V" shaped end rather than a "U" shaped end for the support elements. The Office Action asserts that the difference

between a U and a V is not seen as patentably significant – merely an ornamental variation. The Office Action also asserts that Pennybacker makes up for this deficiency. This rejection is respectfully traversed.

Ogiso does not teach a piezoelectric resonator including a fixing layer made of a UV-setting type resin disposed on said piezoelectric resonator having a short setting time, the fixing layer fixing the leading end portion of said leads and said piezoelectric resonator element prior to formation of said connecting layer, as claimed in claims 1 and 14.

Instead, Ogiso teaches a coupling agent 26, the coupling agent being made of solder or other electrically conductive adhesive agent.

Because Ogiso does not disclose this feature, it cannot provide the advantages of the claimed invention. Additionally, it is not obvious to modify Ogiso to make up for this deficiency. For example, the fixing layer makes it possible to position the resonator element and the plug with no influence on temperature characteristics of the piezoelectric resonator. Additionally, since forming of the temporary fixing layers fixes the positions of the resonator element and the plug, it is not necessary to carry out subsequent operations while maintaining the position or relationship between the resonator element and the plug by mechanically holding both the resonator element and the plug, thus resulting in a very efficient mounting operation.

Pennybacker does not make up for this deficiency.

Thus, if it was obvious to modify Ogiso to make up for this deficiency, then one of ordinary skill in the art would have done so to achieve the above advantages. However, the Examiner has yet to find such a reference.

No motivation exists in Ogiso or Pennybacker for the asserted modification. In fact, the only motivation exists in Applicant's disclosure which constitutes impermissible hindsight reasoning.

Therefore, for all the foregoing reasons, it is submitted that independent claims 1 and 14 are allowable. It is submitted that dependent claims 3-7 and 16-20, depending respectively therefrom, are similarly allowable for at least the reasons discussed as well as for the added features they recite. Withdrawal of the prior art rejections is respectfully requested.

III. CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 3-7, 14, and 16-20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is requested to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,



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APPENDIX

Changes to Claims:

The following is a marked-up version of the amended claims:

1. (Six Times Amended) A piezoelectric resonator, comprising:

a piezoelectric resonator element having a piezoelectric body and electrodes disposed on the piezoelectric body;

a supporting member supporting said piezoelectric resonator element; and

a plurality of leads mechanically connecting said piezoelectric resonator element to said supporting member and permitting electrical connection thereof, each of said leads being provided with a flat leading end portion having a substantially U-shaped edge which opens toward a leading end of the leads, each flat leading end portion being connected substantially in parallel with an electrode using a connecting layer formed with a conductive resin between the flat leading end portion and said electrode; and

a fixing layer made of a UV-setting type resin disposed on said piezoelectric resonator having a short setting time, the fixing layer fixing the leading end portions of said leads and said piezoelectric resonator element prior to formation of said connecting layer; and

said piezoelectric resonator element being attached to the substantially U-shaped edge, on a side of said piezoelectric resonator element which faces said leads, so that an edge of said piezoelectric resonator element on the side which faces said leads may be positioned on the substantially U-shaped edge and that the piezoelectric resonator element is supported by said leads so that a gap is formed between said supporting member and said piezoelectric resonator element.

4. (Three Times Amended) The piezoelectric resonator according to claim 1, further comprising ~~a fixing layer made of a UV-setting type resin coated thereunto having a~~

~~short setting time, the fixing layer fixes the leading end portion of said leads and said piezoelectric resonator element prior to formation of said connecting layer.~~

 said connecting layer being formed with a conductive resin at least injected into a gap between said leading end portion and said electrode.

14. (Six Times Amended) A piezoelectric resonator unit having a piezoelectric resonator, and a hollow protector, the piezoelectric resonator comprising:

 a piezoelectric resonator element having a piezoelectric body and electrodes disposed on the piezoelectric body;

 a supporting member supporting said piezoelectric resonator element; and

 a plurality of leads mechanically connecting said piezoelectric resonator element to said supporting member and permitting electrical connection thereof each of said leads being provided with a flat leading end portion having a substantially U-shaped edge which opens toward a leading end thereof, each said flat leading end portion being connected substantially in parallel with an electrode using a connecting layer formed with a conductive resin between the flat leading end portion and said electrode; and

 said piezoelectric resonator element being supported by said leads so that a gap is formed between said supporting member and said piezoelectric resonator element; and

a fixing layer made of a UV-setting type resin disposed on said piezoelectric resonator having a short setting time, the fixing layer fixing the leading end portion of said leads and said piezoelectric resonator element prior to formation of said connecting layer; and

 said piezoelectric resonator being disposed within and sealed by said supporting member and said protector, and said piezoelectric resonator being attached to the substantially U-shaped edge on a side of the piezoelectric resonator element which faces said leads, so that an edge of said piezoelectric resonator element on the side which faces said leads may be positioned on the substantially U-shaped edge.

17. (Three Times Amended) The piezoelectric resonator unit according to claim 14, further comprising a ~~fixing layer made of a UV setting type resin coated thereunto having a short setting time, the fixing layer fixing the leading end portion of said leads and~~ said piezoelectric resonator element prior to formation of said connecting layer, and said connecting layer being formed with a conductive resin at least injected into a gap between said leading end portion and said electrode.